

duction of a certain type of tobacco by a study of the physical and chemical composition of the soil. The production of a very good cigar leaf tobacco in Texas is the result of such a survey. In a soil survey of the Connecticut Valley by the Bureau of Soils, soils were observed as being adapted to produce certain qualities of leaf of the same variety of tobacco differing markedly in texture and colour. Practical results since secured by growers have shown the deductions of the Bureau to be very valuable, and in most instances correct. Experiments conducted by the Connecticut Station have also shown the value of a careful soil survey of any proposed tobacco districts.

Hall and Russell (5) have shown that there is a close relation between the mechanical or physical analyses of soils and their suitability to potatoes, barley, fruit and hops.

ORIGIN OF THE FLUE-CURED TOBACCO SOILS.

The soils now producing bright tobacco in Canada belong in the glacial lake and river terrace soil province. At the close of the glacial epoch the lakes in this part of the United States and Canada were very numerous, and the water level of those which remain was very much higher, and covered areas that are now from a few feet to two hundred feet above their present shore line. These soils are derived from glacial material and debris which has been reworked and redeposited along lakes and rivers. They vary from beach sands and gravels to heavy clay soils.

CLASSIFICATION.

"The (6) texture of the soil is expressed in the mechanical analysis of a separation into seven grades, the sizes of which are arbitrarily fixed. The results of the analyses show the percentages of sand, silt, and clay."

When, aside from texture, the physical and chemical properties of the soil and its method of formation are alike, we have what we call a soil series extending from the coarse gravelly or sandy soils on the one side to the finer silt and clay soils on the other, and in such a series the texture of the soil determines the distribution of crops. Such soils are given a soil generic name (generally the name of the place where first noted) with qualifying textural terms." We have for example Leamington sand, Leamington fine sand, and Leamington fine sandy loam as prominent types in the Leamington series.

"In the classification of soils, the texture is used to determine the place in the series, and the structure and colour to determine what series the soil can be correlated with. In the flue-cured tobacco section only one soil series has been found which we have arbitrarily designated as the Leamington series."

The results of the physical analyses of a few typical soils of the district are given in Table I.